

S))Q

Conference, demonstration, and practical exercise

1.0 hour

- BFV crews
- Instructors
- TSC personnel

See Appendix A

- Primary instructor
- Assistant instructor

- a. Overhead projector
- b. Viewgraphs (Appendix C)

- a. TM 9-6920-710-12&P-1, Chapters 2 and 3
- b. TM 9-2350-252-10-1/2
- c. TM 9-2350-284-10-1/2

Appendix A. Tools, Equipment, and Materials
Appendix B. Safety
Appendix C. Viewgraphs

7-1. INTRODUCTION.

(5 minutes)

Note. Show Slide 1.

- a. **Reason.** After the completion of PGS training, crews must ensure that PGS equipment is operational, clean, and properly packed prior to turn-in. They must also return the BFV and its turret weapons to normal mode of operation.

Note. Show Slide 2.

- b. **Training Objective.** Given an M2/M3 BFV with BII and PGS installed, you will conduct post operational tasks and after operation PMCS on PGS IAW TM 9-6920-710-12&P-1, Chapters 2 and 3. You will also return the vehicle and its turret weapons to normal mode IAW TM 9-2350-252-10-1/2 or TM 9-2350-284-10-1/2.
- c. **Procedure.** During this block of instruction, we will cover the post operational tasks and after operation PMCS associated with PGS, the vehicle, and its turret weapons. You will be assigned an assistant (small group) instructor for the practical exercise portion of the class. You will use the appropriate TMs to conduct these tasks.

7-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE.

(50 minutes)

- Notes.
- 1. The primary instructor now releases the student crews to their assigned assistant (small group) instructors for the practical exercise portion of this lesson.
 - 2. Prior to students' arrival, ensure an assistant instructor is assigned to each training station.
 - 3. Direct students to their appropriate training station.
 - 4. Each assistant instructor is to conduct a safety briefing for his small group IAW Appendix B.
 - 5. Whenever possible, have the students serve as demonstrators during small group instruction. Have one student read the procedures while another student performs the task. To ensure all students get equal hands-on time, rotate the reading and performance responsibilities.
 - 6. The assistant instructor discusses and clarifies the procedure as required and reinforces the training objective.
 - 7. Show proper use of DA Form 2404 to report faults found during inspection of PGS components.
 - 8. Show proper use of DA Form 2402 to tag faulty components found during inspection of PGS components.
- a. **Post Operational Tasks.** Working as a crew, perform the following post operational tasks after completion of PGS training, using TM 9-6920-710-12&P-1:
 - (1) Conduct BIT.

7-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

- (2) Remove PGS components.
- (3) Clean and inspect PGS components IAW after operation PMCS.
- (4) Return BFV and its turret weapons to normal mode of operation.
- (5) Turn in PGS set.

b. **Conduct BIT.** Upon completion of training and prior to removal of the equipment, the crew conducts BIT to ensure the system is functional. Faulty components are identified for repair.

- (1) Turn on vehicle master power.
- (2) Turn on turret power.
- (3) Perform BIT IAW TM 9-6920-710-12&P-1, Chapter 2.
- (4) If BIT passes, continue with removal.
- (5) If BIT fails, troubleshoot IAW TM 9-6920-710-12&P-1, Chapters 3 and 4.

c. **Remove PGS Components.**

Warning. Ensure vehicle master power switch and turret power switch are in OFF position prior to removal of components. Injury to personnel or damage to components could occur.

Warning. Ensure turret traverse lock is engaged prior to working in and around turret.

Caution. Do not clean BFV with high pressure water with PGS installed. Damage to PGS components can occur.

Notes.

1. Explain to the students that as PGS components are removed, they are placed in the storage cases for later cleaning and inspection. If units are extremely dirty, they must be cleaned prior to removal so they can be placed in cases.
2. Stress the importance of removing PGS cables and components in the order listed.

- (1) Place vehicle master power switch and turret power switch in OFF position.
- (2) Engage turret traverse lock.
- (3) Remove exterior cables.

(a) **W6 cable.**

1. Disconnect W6 cable connector J1 from left-front retro detector unit.
2. Disconnect W6 cable connector J1 from left-rear retro detector unit.
3. Loosen target computer/rear retro detector assembly mounting on turret center support.
4. Disconnect W6 cable connector J4 from target computer unit.

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5. Release velcro straps
6. Remove W6 cable.

(b) W5 cable.

- 1 Disconnect W5 cable connector J1 from right-front retro detector unit.
2. Disconnect W5 cable connector J1 from left-front retro detector unit.
3. Disconnect W5 cable connector J3 from target computer unit.
4. Release velcro straps.
5. Remove W5 cable.

(c) W12 cable.

1. Disconnect W12 cable connector J2 from target computer unit connector J2.
2. Disconnect W12 cable connector J2 from remote systems interface (RSI) unit connector J2.

(d) W1 cable.

1. Disconnect W1 cable connector J1 from target computer unit.
2. Disconnect W1 cable connector from transceiver unit.
3. Release velcro straps.
4. Remove W1 cable.

(e) W2 cable.

1. Disconnect W2 cable connector J1 from RSI unit connector J1.
2. Release velcro straps.
3. Remove grommet from commander's rear periscope port. Remove W2 cable from grommet.
4. Remove W2 cable from outside of BFV and place inside turret for later removal.

(4) Remove interior components.

(a) Vehicle interface assembly.

1. Disconnect W7 cable connector J1 from TBOS gunner's eyepiece unit.

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2. Disconnect W8 cable connector J1 from TBOS commander's eyepiece unit.
3. Remove four screws and lockwashers and remove replacement floor plate from turret floor.

Note. If control panel bracket is used (basic BFV), remove it together with control panel.

4. Disconnect control panel cable connector J1 from vehicle interface unit connector J1. Remove control panel from vehicle.
5. Disconnect W11 cable connector J1 from DTP J1.
6. Disconnect W9 cable connectors J3 and J4 from DTP J3 and DTP J4.
7. Disconnect W10 cable connector J2 from DTP J2.
8. Disconnect W10 cable connections from radio (1780) and turret position indicator.
9. Connect vehicle cable connector J1 to turret position indicator connector J1.
10. Release velcro straps holding cables.

Note. Cables connected to vehicle interface assembly remain connected to the units on the vehicle interface bracket.

11. Coil and collect W2, W7, W8, W9, W10, and W11 cables into a bundle.
12. Remove vehicle interface assembly from turret floor.
13. Verify that protective covers are installed on vehicle connectors DTP J1 - DTP J4.
14. Install BFV floor plate to turret floor. Secure with four lockwashers and screws.

(b) Shorting plug.

1. Open 25 mm gun guard and gun cover.
2. Release velcro strap and disconnect shorting plug from vehicle connector.
3. Connect vehicle connector to the 25 mm gun.
4. Close 25 mm cover and gun guard.

(c) TBOS commander's eyepiece unit.

1. Remove pin and replacement brow pad from sight.
2. Remove TBOS eyepiece unit and eyepiece shield from commander's sight extension.

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3. Install rubber eye cushion on ISUCE optical port.
 4. Install vehicle's brow pad and secure with pin.
 - (d) TBOS gunner's eyepiece unit.
 1. Remove pin and replacement brow pad from sight.
 2. Remove TBOS eyepiece unit from sight.
 3. Install rubber eye cushion on ISU optical port.
 4. Install vehicle's brow pad and secure with pin.
 - (e) LOW AMMO light covers.
 1. Remove AP light cover from between AP low ammo sensor and AP ammo can.
 2. Remove HE light cover from reflector on HE ammo can door.
 3. Remove coax light cover from between coax ammo boxes.
- (5) Remove exterior components.
 - (a) Hull defilade detector assembly (all locations).
 1. Disconnect hull defilade detector assembly cable connector J2 from retro detector unit.
 2. Release velcro straps.
 3. Remove hull defilade detector assemblies from front smoke grenade launcher tubes and rear turret bustle rack corners.
 - (b) Retro detector assembly (right- and left-front). Remove retro detector assemblies from turret lifting eyes.
 - (c) Target computer/rear retro detector assembly. Remove target computer/rear retro detector assembly from turret center support.
 - (d) Global positioning sensor (GPS) antenna assembly.
 1. Lift remote system interface (RSI) assembly from ammunition box storage bracket and disconnect GPS antenna cable from RSI unit connector J3. Lower RSI assembly.
 2. Remove GPS antenna cable from rear of turret.
 3. Lift locking handle and remove GPS antenna assembly from rear of vehicle antenna protective guard.

7-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

(e) RSI assembly.

1. Remove retaining strap from ammunition box storage bracket.
2. Remove RSI assembly from ammunition box storage bracket.

(f) Transceiver unit (TOW launcher).

1. Remove transceiver unit from mounting bracket.
2. Remove two screws, washers, and mounting bracket from TOW launcher.
3. Install two washers and screws on TOW launcher.

(g) Transceiver assembly (25 mm gun).

Caution. Ensure transceiver unit locking handle is in locked position before removing transceiver assembly.

1. Release strap and unlock locking handle of bracket.
2. Remove transceiver assembly from 25 mm gun barrel.

d. **Clean and Inspect PGS Components.**

(1) **General PMCS procedures.** If any deficiencies are discovered during visual inspection ensure you:

- (a) Consult TM 9-6920-710-12&P-1, Chapter 3 to determine if component is considered Not Mission Capable (NMC).
- (b) Tag the component with the problem discovered, using DA Form 2402.
- (c) Report the failure on DA Form 2404.
- (d) Return the component to Training Support Center (TSC).

Caution. When cleaning components, ensure only authorized cleaning materials are used. Failure to use the correct cleaning materials can lead to premature failure of components.

Caution. Do not use high pressure water to clean the equipment due to risk of equipment damage.

(2) **General cleaning and inspection checks.** Perform the following general cleaning and inspection checks for all exterior and interior components:

- (a) Wipe component with a soft rag. Moisten rag with water if required.
- (b) Visually inspect components for damaged or missing parts.
- (c) Inspect connectors for damage, foreign objects, and bent or damaged pins.

7-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

- (d) Verify that decals and markings are present and legible.
- (e) Lubricate all moving parts of mounting brackets with CLP (see Appendix A).
- (f) Replace all dust caps before packing assemblies in storage cases.

(3) Cleaning and inspection of exterior components.

- (a) Transceiver unit.

Caution. Always ensure that transceiver unit locking handle is locked to mounting bracket. Failure to follow this caution may result in transceiver unit falling out of mounting bracket and becoming damaged.

- 1. Check lens for damage or cracks.
- 2. Clean lens with lens paper moistened with lens cleaning compound.
- 3. Inspect locking handle for damage.
- 4. Inspect expansion rings for damage.
- 5. Check that moisture indicator is blue or light blue. Red or pink indicates moisture.

Note. Transceiver unit will rattle (if gently shaken) if shock sensor is tripped.

- 6. Check if shock sensor has been tripped.
- 7. Check mounting bracket for damage to locking handle and strap.
- 8. Inspect rubber pads of mounting bracket for damage.

- (b) Transceiver unit bracket (TOW). Clean and inspect IAW general cleaning and inspection instructions.

- (c) RSI assembly.

- 1. Check that moisture indicator color is blue or light blue. Red or pink indicates moisture.
- 2. Inspect rubber pads of mounting bracket for damage.
- 3. Inspect protective bag for damage.

- (d) GPS antenna assembly.

- 1. Inspect rubber pads of mounting bracket for damage.
- 2. Inspect antenna, cable, and cable connector for damage.

7-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

(e) Target computer/rear retro detector assembly.

1. Clean lenses with rag moistened with water.
2. Check that moisture indicator color is blue or light blue. Red or pink indicates moisture.
3. Inspect rubber pads of mounting bracket for damage.
4. Inspect protective bag for damage.
5. Check reflectors and detectors for damage or cracks.
6. Check strobe light for damage.

(f) Retro detector assembly (right- and left-front).

1. Clean lenses with a rag moistened with water.
2. Check reflectors and detectors for damage or cracks.
3. Check strobe light for damage.
4. Check rubber pads of mounting bracket for damage.

(g) Hull defilade detector assemblies.

1. Clean lenses with a rag moistened with water.
2. Check detectors for damage or cracks.
3. Inspect cable for damage.
4. Inspect rubber pads of mounting bracket for damage.

(h) Grommet. Clean and inspect IAW general cleaning and inspection instructions.

(4) **Cleaning and inspection of interior components.**

(a) TBOS eyepiece units (gunner's and commander's).

1. Clean lens for damage or cracks. If lens is dirty, wipe with lens paper moistened with lens cleaning compound.
2. Inspect connector for damaged or missing dust cap.
3. Pull out on locking pin and check locking collar for free rotation.

Warning. Damaged foam can cause injury or blindness to soldiers during training.

(b) Brow pads (gunner's and commander's). Inspect brow pads for damaged foam.

(c) Vehicle interface assembly.

7-2. CONFERENCE/DEMONSTRATION/PRACTICAL EXERCISE (Con't).

Note. Vehicle interface assembly consists of vehicle interface unit; expansion unit; TBOS driver unit; W2, W3, W4, W7, W9, W10, and W11 cables; and vehicle interface assembly bracket.

1. Check that moisture indicators color are blue or light blue. Red or pink indicates moisture.
2. Check that each unit is securely attached to bracket.
3. Inspect all cables for damage.
4. Inspect connectors on units and both ends of cables for damage, foreign objects, and bent or damaged pins.
5. Inspect cables for damaged or missing dust caps.
6. Inspect cables for damaged or missing velcro straps.

(d) Control panel.

Note. Moisture indicator is located in upper right corner of control panel display screen.

1. Check that moisture indicators color is blue or light blue. Red or pin indicates moisture.
2. Check pushbuttons for damage.
3. Inspect cable for damage.
4. Inspect cable for damaged or missing dust cap.
5. Check that eject button moves freely.

(e) Shorting plug. Clean and inspect IAW general cleaning and inspection instructions.

(f) LOW AMMO light covers. Clean and inspect IAW general cleaning and inspection instructions.

(5) Cleaning and inspection of cables.

Note. The remaining cables are W1, W5, W6, and W12.

(a) General cleaning and inspection checks. Perform the following general cleaning and inspection checks for all cables:

1. Wipe cables with a soft rag moistened with water.
2. Inspect cable material for damage.
3. Inspect cables for damaged and missing dust caps.
4. Inspect connectors for damage, foreign objects, and bent or damaged pins.
5. Verify all decals and markings are present and legible.
6. Install all connector dust caps before packing cables in storage case.

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(b) W1 cable. Inspect for missing or damaged magnets.

(6) **Cleaning and inspection of storage cases.**

Caution. Ensure insides of storage cases are dry prior to storage. Moisture inside storage cases could damage components.

- (a) Wipe cases with a soft rag.
- (b) Inspect latches for damage and missing parts.
- (c) Inspect hinges for damaged and broken parts.
- (d) Inspect handles for damage and missing parts.
- (e) Verify decals and markings are present and legible.

e. **Return Vehicle and Turret Weapons to Normal Operation.**

- (1) Install periscope into commander's rear periscope port.
- (2) Verify that vehicle floor plate is correctly installed.
- (3) Verify that cable to TPI is correctly installed.
- (4) Perform after operation PMCS on turret.

f. **Turn In PGS Set.**

- (1) Clean and inspect all PGS equipment.
- (2) Dry all equipment prior to storage.
- (3) Store all components properly in storage cases.
- (4) Tag and turn in unserviceable or damaged components.

Note. Only TSC personnel are authorized to repair or replace faulty components IAW Maintenance Allocation Chart (MAC) in TM 6920-710-12&P-1, Appendix B.

7-3. FINAL REVIEW. (5 minutes)

a. **Student Questions.**

Note. Show Slide 3.

b. **Summary of Main Teaching Points.**

- (1) BIT
- (2) Removal of PGS
- (3) After operation PMCS

7-3. **FINAL REVIEW (Con't).**

- (4) Vehicle and turret weapons to normal mode of operation
- (5) Turn in of PGS set

Note. Show Slide 4.

- c. **Closing Statement.** This block of instruction has prepared you to remove, clean, inspect, and turn in PGS components, as well as perform BFV checks and procedures. You should now be proficient in conducting the post operational procedures associated with training with PGS.

APPENDIX A TO LESSON PLAN 7

POST OPERATIONAL PROCEDURES

TOOLS, EQUIPMENT, AND MATERIALS

Listed equipment is one per vehicle crew.

1. M2/M3 BFV with BII and PGS installed
2. TM 9-6920-710-12&P-1
3. TM 9-2350-252-10-1/2 or TM 9-2350-284-10-1/2
4. Expendable/durable items (see Appendix D, TM 9-6920-710-12&P-1)
5. DA Form 2404
6. DA Form 2402

APPENDIX B TO LESSON PLAN 7

POST OPERATIONAL PROCEDURES

SAFETY

Listed general safety regulations are to be strictly enforced during the performance of this lesson.

1. Mount and dismount vehicle over left front or through the back ramp.
2. Maintain three points of contact while on top of vehicle.
3. No smoking within 50 m of vehicle.
4. Do not go over or under gun barrel.
5. Ensure turret traverse lock is engaged before entering turret or working in or around turret.
6. Ensure vehicle master power switch and turret power switch are in OFF position during removal of PGS.
7. No cables should be connected or disconnected by untrained personnel.

**APPENDIX C
TO LESSON PLAN 7**

POST OPERATIONAL PROCEDURES

VIEWGRAPHS
